

Space Weather Forecast

Issued on Tuesday, 04 April 2023 at 12:29 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of Minor Geomagnetic Storms on 04 and 05 Apr. Slight chance of Moderate class flares (R1-R2; Minor-Moderate radio blackouts) throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low with no significant flares. There are three active regions, with one prominent region in the southwest quadrant, which has simplified slightly. The two remaining regions are both simple. No Earth-directed CMEs have been observed on available imagery.

Solar Wind / Geomagnetic Activity: The solar wind has varied between slightly elevated and elevated levels. Total magnetic field strength was weak, with the important north-south component also varying weakly. Geomagnetic activity was mainly Quiet to Active.

Energetic Particles / Solar Radiation: High energy proton enhancement (greater than 10MeV) has been at background levels.

Four-Day Space Weather Forecast Summary

Solar Activity: Expected to be mainly Low, with a slight chance of Moderate activity.

Solar Wind / Geomagnetic Activity: No Earth-directed CME are expected, with a very low chance of a glancing blow on 04 Apr. A combination of fast solar winds from three different coronal holes are currently affecting the Earth, reaching slightly elevated or elevated speeds. These are expected to start to decline through 06 and 07 Apr. No further fast winds are then expected to connect to the Earth. Geomagnetic activity is forecast to be mainly Unsettled to Active through 04 and 05 Apr, with a risk of G1/Minor Storms. A trend towards mainly Quiet to Unsettled conditions is then expected through the remainder of the forecast period.

Energetic Particles / Solar Radiation: No solar radiation storms are expected through the period.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	30	30	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	15	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)